



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/732,949 | 12/11/2003 | Tieyu Zheng | 884.G25US1 | 9235 |
| 21186 | 7590 | 09/27/2005 | EXAMINER | |
| SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH P.O. BOX 2938 MINNEAPOLIS, MN 55402-0938 | | | DANG, PHUC T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2818 | |

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/732,949

Applicant(s)

ZHENG ET AL.

Examiner

PHUC T. DANG

Art Unit

2818



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on August 17, 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2818

DETAIL ACTION

Response to Arguments

1. Applicant's arguments filed August 17, 2005 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 5 is rejected under 35 U.S.C. 102 (b) as being anticipated by Toy et al. (U.S. Patent No. 5,982,038).

Toy et al. discloses a method of manufacturing a TO can comprising:

placing a solder preform (43, Fig. 6) between a metal cover and an insulative base (10, Fig. 6) [col. 5, lines 15-25]; and

applying a current to the solder preform until the solder preform melts to seal a metal cover to the insulating base [col. 4, lines 50-54].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2818

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toy et al. (U.S. Patent No. 5,982,038) in view of Heschel (U.S. Patent No. 6,818,464).

Regarding claims 1 and 6, Toy et al. discloses a method of manufacturing an optoelectronic package having an insulating base with multiple conductive vias running through the insulating base, and having a metal cover that at least partially encloses an optoelectronic device mounted on the insulating base, the method comprising:

placing a solder preform (43, Fig. 6) between a metal cover and an insulative base (10, Fig. 6);

applying pressure between the metal cover and the insulative base [col. 8, lines 44-56].

Toy et al. discloses all the features of the claimed invention as discussed above, but does not disclose applying a current to the solder preform until the solder preform melts to seal a metal cover to the insulating base.

Heschel, however, discloses applying a current to the solder preform until the solder preform melts to seal a metal cover to the insulating base [Fig. 7 and col. 10, lines 44-50].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the above teaching of Toy et al. as taught by Heschel for a purpose of improving an optoelectronic package process.

Regarding claims 2 and 7, Heschel discloses metalizing (707, Fig. 7) a top surface of the insulating base (702, Fig. 7) prior to the placing of the solder preform and creating a metallized

Art Unit: 2818

surface (707, Fig. 7) on the insulating base (702, Fig. 7), wherein placing the solder preform between the metal cover and the insulating base further comprises placing the solder preform in contact with the metallized surface [col. 10, lines 47-53].

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the above teaching of Toy et al. as taught by Heschel for a purpose of improving an optoelectronic package process.

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toy et al. (U.S. Patent No. 5,982,038) in view of Ma et al. (U.S. Patent No. 6,709,898).

Regarding claims 3-4, Toy et al. discloses all the features of the claimed invention as discussed above but does not disclose allowing the solder preform to cool; and removing the pressure between the metal cover and the insulating base.

Ma et al., however, discloses allowing the solder preform to cool; and removing the pressure between the metal cover and the insulating base [col. 7, lines 57-61].

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the above teaching of Toy et al. as taught by Ma et al. for a purpose of improving the thermal characteristics.

Response to Arguments

5. Applicant's arguments filed August 17, 2005 have been fully consider but they are not persuasive.

In response argument, Applicants state that Heschel does not or suggest a step of applying current to melt the solder and also fails to teach or suggest applying a current through the vias in

Art Unit: 2818

the insulating base to melt the solder as shown on page 6.

However, in Fig. 7, Hescel discloses a step of providing current path from the upper surface of the lid 705, via a through-hole and down to the bottom of the lid 705 (col. 10, lines 47-50).

The current will flow in the through-hole 707 and cause the electrical connections to the component 704 via the solder ring 706 and a connection metallization 708 on the surface of the base 702 and via a solder interconnect 709. Thus, the current will flow through-hole 707 to heat the solder until the solder preform melts to seal a metal cover to the base 702 as suggested in Fig. 7 and col. 10, lines 37-58.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE MONTHS** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is (571) 272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.

Art Unit: 2818

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and After Final communications.

9. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc.T. Dang

PD

A handwritten signature in black ink, appearing to read 'Phuc.T. Dang', with a long, sweeping horizontal line extending to the right.

Primary Examiner

Art Unit 2818